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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,137

04/29/2005

Hidesato Mano

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EXAMINER

FELAU, LISEDA

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,137	<b>Applicant(s)</b> MANO, HIDESATO	
	<b>Examiner</b> LISED A FELAU	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/12/2006; 12/06/2006; 01/16/2007</u> .                       | 6) <input type="checkbox"/> Other: _____                          |



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by NAKAMURA et al. (US 6,245,182 B1).

Regarding claim 1, NAKEMURA et al. teaches of a thermosetting and active energy ray curable resin composition comprising a polymer having a (meth)acryl equivalent weight of 100 to 300 g/eq, a hydroxyl value of 20 to 500 and a weight-average molecular weight of 5,000 to 50,000 and a polyfunctional isocyanate (heat curing agent). NAKEMURA more specifically teaches that the (meth)acryl polymer is a glycidyl (meth)acrylate which is known by one of the ordinary skill in the art to comprise of epoxy groups. [col.3: 34-52].

Regarding claim 2, the teachings of claim 1 apply. In addition, NAKEMYRA et al. teaches that the reaction product is obtained by poly-addition of glycidyl (meth)acrylate based polymer and alpha, beta unsaturated monocarboxylic acid (the polymer is the reaction product of the addition of a monocarboxylic acid having an unsaturated double bond to a polymer having an epoxy group) [col.3: 49-52].

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Regarding claim 3, the teachings of claims 1 and 2 apply. In addition, NAKEMYRA et al. teaches that the glycidyl (meth)acrylate based polymer may be a homopolymer of glycidyl (meth)acrylate or a copolymer of glycidyl (meth)acrylate [col.3: 53-56].

Regarding claims 6 and 7, NAKEMURA et al. teaches of a transfer material comprising a protective layer on a releasable sheet [col.3: 30-46; col.4: 14-27].

Regarding claim 8, NAKEMURA et al. teaches a method for producing a molded article comprising the steps of [col.3: 62-64; col.4: 14-23]:

- a. adhering transfer material onto a surface of a molded article [col.3: 64-67];
- b. releasing the substrate sheet (removing the releasable base sheet) [col.4: 1];
- c. irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) [col.4: 2].

Regarding claim 9, NAKEMURA et al. teaches a method of producing a molded article comprising the steps of [col.4: 3-6]:

- a. placing a transfer material in a mold (applying a transfer material to the inside of a mold) [col.4: 7-8];
- b. injecting a resin into a cavity for filling, molding and simultaneously adhering the transfer material to the surface of the molded resin (filling a cavity of the mold with a resin by injection to thereby form a molded article and adhering the transfer material to a surface of the molded article) [col.4: 8-11];

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- c. releasing the substrate sheet (removing the releasable base sheet) [col.4: 12];
- d. irradiating with an active energy ray (irradiating the surface of the molded article with an active energy ray) [col.4: 13].

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- 1. Determining the scope and contents of the prior art.
- 2. Ascertaining the differences between the prior art and the claims at issue.
- 3. Resolving the level of ordinary skill in the pertinent art.
- 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAKAMURA et al. (US 6,245,182 B1) as applied to claims 1-3 and 6-9 above and in further view of KAWAKAKUBO et al. (US 4,837,274).

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NAKAMURA et al. teaches a thermosetting and active curable energy ray composition as taught in claim 1. NAKAMURA et al. does not teach about a heat-curing agent selected from the group as required in claim 4; and of a photopolymerization initiator (claim 5).

KAWAKUBO et al. teaches of a curable composition wherein a silane coupling agent is used as a curing catalyst in a thermosetting and active energy ray curable (meth)acryl based polymer or copolymer (claim 4: wherein the heat curing agent is or more compounds selected from the group consisting of silane coupling agents)[col.2: 53-68; col.10: 34, 50-51]. Regarding claim 5, KAWAKUBO et al. teaches of additives like plasticizers which can be admixed at the time when preparing the organic polymer (photo polymerization initiator) [col.9: 16-26, 36-51].

At the time of invention, it would have been obvious to one of ordinary skill in the art to use the teachings of heat curing agents and polymerization additives as taught by KAWAKUBO in the teachings of NAKAMURA et al. in order to better control tensile properties i.e. elasticity and elongation of the composition [KAWAKUBO: col.2, lines 3-4 and 16-17] used to make articles with superior wear and abrasion resistance, chemical resistance and increased work life thus avoiding cracks when making curved surfaces.

### ***Conclusion***

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LISEDA FELAU whose telephone number is (571)270-5128. The examiner can normally be reached on Monday thru Thursday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LF

/Christina Johnson/  
Supervisory Patent Examiner, Art Unit 1791